Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

Claims 1 to 135. (Cancelled)

136. (New) A molecule comprising:

(a) a self-complementary DNA sequence and an RNA-polymerase binding site; wherein said self complementary sequence is selected from the group consisting of:

(i) one contiguous oligonucleotide to which RNA polymerase can bind to form a transcription bubble;

(ii) two partially complementary upper and lower oligonucleotides that form a single-stranded transcription bubble region comprising a defined site from which an initiator and a suitable RNA polymerase can synthesize an abortive oligonucleotide product;

(iii) two complementary oligonucleotides that form a transcription bubble region in the presence of an RNA polymerase, which allows for the synthesis of an abortive oligonucleotide product; and

(b) a target-specific linker on at least the 3' or 5' end of one strand.

137. (New) The molecule of claim 136, wherein said target-specific linker is selected from the group consisting of:

(i) DNA;

(ii) RNA;

(iii) a nucleotide analog;

(iv) an oligo dT sequence;

(v) a chemically reactive group;

(vi) a thiol reactive group;

(vii) an amine reactive group;

(viii)an antibody; and

(ix) a protein.

138. (New) The molecule of claim 136, wherein said target-specific linker is selected from the group consisting of:

(i) glutathione-s-transferase;

(ii) a methylase;

(iii) a demethylase;

(iv) a DNA repair enzyme;

(v) a nuclease;

(vi) a toxin;

(vii) a signal peptide;

(viii)poly-L-lysine;

(ix) a hapten;

(x) streptavidin;

(xi) biotin;

(xii) dinitrophenol;

(xiii)an affinity tag;

(xiv)hexahistadine;

(xv) glutathione;

(xvi)a chelator;

(xvii)an alkylator;

(xviii)a modified linkage; and

(xix)an alpha anomeric nucleic acid.

139. (New) The molecule of claim 136, further comprising a promoter.

140. (New) The molecule of claim 139, wherein said promoter is an artifical promoter.

141. (New) The molecule of claim 139, wherein said promoter is RNA polymerase specific.

142. (New) A molecule consisting of a self-complementary DNA sequence and an RNA-polymerase binding site; wherein said self complementary DNA sequence comprises, in a 5' to 3' direction, on one strand regions A, B and C; and, on the complementary strand in a 3' to 5' direction, regions A', E and C'; wherein said molecule comprises:

(c) a target-specific linker sequence attached to either the 3' or 5' end of one strand;

(d) region A on the 5' end of a first strand of the DNA molecule complementary to region A' near the 3' end of the second strand;

(e) region B following region A on the first strand wherein region B is not complementary to region E on the second strand, wherein regions B and E form a single stranded bubble between B and E;

(f) region C on the first strand following region B wherein region C is complementary to region C' on the second strand; and

(g) a target-specific linker on either the 3' or 5' end of one strand.

143. (New) The DNA molecule of claim 142 further comprising a region D, wherein region D is a short sequence joining the two complementary stands to from a contiguous DNA molecule.

144. (New) The molecule of claim 142, wherein region A and A' are from about 5 to about 25 nucleotides, or from about 7 to about 15 nucleotides.

145. (New) The molecule of claim 142, wherein regions B and E are from about 8 to about 16 nucleotides or from about 10 to about 14 nucleotides.

146. (New) The molecule of claim 142, wherein C and C' are from about 5 to about 25 nucleotides, or from about 10 to about 20 nucleotides.

147. (New) The molecule of claim 142, wherein said target-specific linker comprises a single-stranded overhang region of 5 to about 40 nucleotides.

148. (New) The molecule of claim 142, wherein said target-specific linker comprises a single-stranded overhang region from about 10 to about 25 nucleotides.

149. (New) The molecule of claim 136, wherein said nucleic acid is from about 50 to about 150 nucleotides in length.

150. (New) The molecule of claim 149, wherein said nucleic acid is from about 55 to about 125 nucleotides in length.

151. (New) The molecule of claim 136, wherein said target specific-linker is specific to a target DNA from an organism selected from the group of organisms consisting of: bacteria; viruses; fungus; molds; amoebas; prokaryotes; eukaryotes; pathogens of monkeys; pathogens of apes; pathogens of cats; pathogens of dogs; pathogens of cows; pathogens of pigs; pathogens of horses; pathogens of rabbits; pathogens of humans; E. coli; Steptococcus; Bacillus; Mycobacterium; HIV; Hepatitis virus; mammals; monkeys; apes; cats; dogs; cows; pigs; horses; rabbits; and humans.

152. (New) The molecule of claim 136, wherein said target specific-linker is specific to a target mRNA from an organism selected from the group of organisms consisting of: bacteria; viruses; fungus; molds; amoebas; prokaryotes; eukaryotes; pathogens of monkeys; pathogens of apes; pathogens of cats; pathogens of dogs; pathogens of cows; pathogens of pigs; pathogens of horses; pathogens of rabbits; pathogens of humans; E. coli; Steptococcus; Bacillus; Mycobacterium; HIV; Hepatitis virus; mammals; monkeys; apes; cats; dogs; cows; pigs; horses; rabbits; and humans.

153. (New) The molecule of claim 136, wherein said target-specific linker is complementary to a nucleic acid specific to a disease, disorder or condition.

154. (New) The molecule of claim 153, wherein said disease, disorder or condition is selected from the group consisting of: infectious disease; Alzheimer disease; muscular dystrophy; cancer; breast cancer; colon cancer; cystic fibrosis; fragile X syndrome; hemophilia A and B; Kennedy disease; ovarian cancer; lung cancer; prostate cancer; retinoblastoma; myotonic dystrophy; Tay Sachs disease; Wilson disease; and Williams disease.

155. (New) The molecule of claim 154, wherein said disease, disorder or condition is cancer.

156. (New) The molecule of claim 154, wherein said disease, disorder or condition is infectious disease.

157. (New) The molecule of claim 136, wherein said target-specific linker is an antibody.

158. (New) The molecule of claim 157, wherein said antibody is specific for a second molecule from an organism selected from the group of organisms consisting of: bacteria; viruses; fungus; molds; amoebas; prokaryotes; eukaryotes; E. coli; Steptococcus; Bacillus; Mycobacterium; HIV; Hepatitis virus, pathogens of monkeys; pathogens of apes; pathogens of cats; pathogens of dogs; pathogens of cows; pathogens of pigs; pathogens of horses; pathogens of rabbits; pathogens of humans; mammals; monkeys; apes; cats; dogs; cows; pigs; horses; rabbits; and humans.

159. (New) The molecule of claim 157, wherein said antibody is specific for a second molecule from a disease, disorder or condition, wherein said disease, disorder or condition is selected from the group consisting of: infectious disease, Alzheimer disease, muscular dystrophy, cancer, breast cancer; colon cancer; cystic fibrosis; fragile X syndrome; hemophilia A and B; Kennedy disease; ovarian cancer; lung cancer; prostate cancer; retinoblastoma; myotonic dystrophy; Tay Sachs disease; Wilson disease; and Williams disease.

160. (New) The molecule of claim 157, wherein said antibody is specific for a protein from an organism selected from the group of organisms consisting of: bacteria; viruses; fungus; molds; amoebas; prokaryotes; eukaryotes E. coli; Steptococcus; Bacillus; Mycobacterium; HIV; Hepatitis virus; pathogens of monkeys; pathogens of apes; pathogens of cats; pathogens of dogs; pathogens of cows; pathogens of pigs; pathogens of horses; pathogens of rabbits; pathogens of humans; mammals; monkeys; apes; cats; dogs; cows; pigs; horses; rabbits; and humans.

161. (New) The molecule of claim 157, wherein said antibody is specific for a protein from a disease, disorder or condition, wherein said disease, disorder or condition is selected from the group consisting of: infectious disease; Alzheimer disease; muscular dystrophy; cancer; breast cancer; colon cancer; cystic fibrosis; fragile X syndrome; hemophilia A and B; Kennedy disease; ovarian cancer; lung cancer; prostate cancer; retinoblastoma; myotonic dystrophy; Tay Sachs disease; Wilson disease; and Williams disease.

162. (New) The molecule of claim 136, wherein said linker is specific for telomerase.

163. (New) The molecule of claim 136, wherein said linker consists of a reactive group selected from the group consisting of: a primary amine, a secondary amine, a sulfhydryl group, and streptavidin.

164. (New) The molecule of claim 136, attached to a solid phase.

165. (New) The molecule of claim 164, wherein said linker comprises streptavidin joined to a biotin solid phase.

166. (New) A particle, linked to multiple copies of the molecule of claim 136.

167. (New) The particle of claim 166, linked to more than 10 copies of the molecule of claim 136.

168. (New) The particle of claim 167, linked to more than 100 copies of the molecule of claim 136.

169. (New) The particle of claim 168, linked to more than 1000 copies of the molecule of claim 136.

170. (New) The particle of claim 169, linked to more than 10, 000 copies of the molecule of claim 136.

171. (New) The molecule of claim 136, wherein said target-specific linker is on the 3' end of one strand.

172. (New) The molecule of claim 136, wherein said target-specific linker is on the 5' end of one strand.

173. The molecule of claim 136, containing 2, 3, or 4 target specific linkers.